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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,683	04/01/2004	Hanan Kupferman	K35A1407	1623

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EXAMINER	
OLSON, JASON C	

ART UNIT	PAPER NUMBER
2651	

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/816,683	KUPFERMAN, HANAN	
	Examiner	Art Unit	
	Jason C. Olson	2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-10* is/are rejected.

7)☒ Claim(s) *7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *04/01/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following reasons: The claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In particular, claim 1 recites the limitation that the first normal burst and the first quadrature burst have the same first phase and the second normal burst and first quadrature burst have the same second phase. By this reasoning, the first phase and the second phase are equal because the first normal burst and the second normal burst will have the same phase that is equal to the first quadrature burst. Therefore, the limitation that the difference between the first phase and the second phase is less than 180 degrees is not enabling.

The examiner will examine claim 1 by interpreting the claim to read that the second normal burst and the second quadrature burst have the same second phase (underline added for emphasis).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Serrano (US 6,034,835) and Ahn (US 6,366,423). Claim 1 is interpreted by the examiner as stated above.

Regarding claims 1, 3, 6, and 10, Serrano teaches a first normal burst field (see col. 5, ln. 45-52 and figure 3, item A); a first quadrature burst field spanning a portion of a radial extent of the first normal burst field (see col. 5, ln. 45-52 and figure 3, items A and B); a second normal burst field, the second normal burst field being radially aligned with and away from the first normal burst field, the second normal burst field spanning a portion of a radial extent of the first quadrature burst field (see col. 6, ln. 3-5 and figure 3, items A-C), and a second quadrature burst field, the second quadrature burst field being radially aligned with and away from the first quadrature burst field, the second quadrature burst field spanning a portion of a radial extent of the second normal burst field (see col. 6, ln. 3-9 and figure 3, items A-D), wherein the first normal burst field and the first quadrature burst field have a same first phase (see col. 6, ln. 51-53 and figure 3, items A and B), the second normal burst field and the second quadrature burst field have a same second phase (see col. 6, ln. 53-55 and figure 3, items C and D), a difference between the first phase and the second phase is less than 180 degrees (see col. 6, ln. 25-45).

Serrano fails to teach a portion of the first quadrature burst field being circumferentially contiguous with the first normal burst field; the second quadrature burst field is contiguous with the first quadrature burst field; the first and second normal burst fields and the first and second quadrature burst fields are trimmed after being written to the disk by the write transducer; and each of the first and second normal burst fields is circumferentially adjacent to at least one of the first and second quadrature burst fields. However, Ahn is relied upon to teach a portion of a first

quadrature burst field being circumferentially contiguous with a first normal burst field (see col. 3, ln. 39-44 and 58-62 and figure 3A, items A/B Burst and C/D burst); the second quadrature burst field is contiguous with the first quadrature burst field (see figure 3, item C/D burst; it can be seen that the quadrature bursts C and D are contiguous); the first and second normal burst fields and the first and second quadrature burst fields are trimmed after being written to the disk by the write transducer (see figure 3A, items 31-34; it can be seen that the servo burst are trimmed); and each of the first and second normal burst fields is circumferentially adjacent to at least one of the first and second quadrature burst fields (see figure 3A, items 31-34). It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon the servo burst field of Serrano by applying the teaching of placing the burst fields contiguous to each other and trimming the burst fields as taught by Ahn for the purpose of improving recording density by reducing the servo burst area by placing the servo bursts immediately adjacent to each other and trimming the servo bursts.

Regarding claim 2, the combination of Serrano and Ahn teach all the limitations of claim 1. The combination is further relied upon to teach the disk defines a plurality of tracks (see col. 13, ln. 47-52 of Serrano), each of the plurality of tracks defining a track width (see figure 13, item 610 of Serrano), and wherein each of the first and second normal burst fields and each of the first and second quadrature burst fields spans a radial extent that is greater than half of the track width (see figure 3, items A-D of Serrano; it can bee seen that the servo burst span a radial extent that is greater than half a track width).

Regarding claim 4, the combination of Serrano and Ahn teach all the limitations of claim 1. The combination is further relied upon to teach a write transducer having a write transducer

width (see coo. 13, ln. 61-62 and figure 13, item 606 of Serrano) and wherein a width of the first and second normal burst fields and a width of the first and second quadrature burst fields are dictated by the write transducer width (see figure 3, items A-D of Serrano; it is obvious to an artisan in the art that the width of the write transducer dictates the width of the burst fields because the transducer writes the burst fields so it therefore dictates the size of the servo burst).

Regarding claim 5, the combination of Serrano and Ahn teach all the limitations of claim 1. The combination is further relied upon to teach the first and second normal burst fields and the first and second quadrature burst fields are not trimmed after being written to the disk by the write transducer (see figure 3, item 100 of Serrano; it can be seen that the servo bursts are not trimmed).

Regarding claim 8, the combination of Serrano and Ahn teach all the limitations of claim 1. The combination is further relied upon to teach the disk is configured to enable the sampled servo system controller to determine a servo correction signal that includes a servo correction magnitude and a servo correction direction from a reading of only two circumferentially adjacent servo burst fields (see col. 12, ln. 41-45 and col. 13, ln. 5-12 of Serrano; it is interpreted by the examiner that the PES signal is a servo control signal and the difference between the current head position and desired head position contains the correction direction and correction magnitude).

Regarding claim 9, the combination of Serrano and Ahn teach all the limitations of claim 1. The combination is further relied upon to teach the difference between the first phase and the second phase is about 90 degrees (see col. 6, ln. 25-45 of Serrano).

Allowable Subject Matter

Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art fails to teach in combination a sampled servo system includes a Discrete Fourier Transform (DFT) – type demodulator coupled to a read transducer, the DFT-type demodulator being configured to generate a servo correction signal that includes a servo correction magnitude and a servo correction direction from a phase information derived from a first normal and first quadrature burst fields read by the read transducer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason C. Olson whose telephone number is (571)272-7560. The examiner can normally be reached on Monday thru Thursday 7:30-5:30; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Hudspeth can be reached on (571)272-7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCO
May 23, 2005

DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600